



Planetary Science Technology Development:

What are we thinking

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A Hard Look at PSD Technology Development

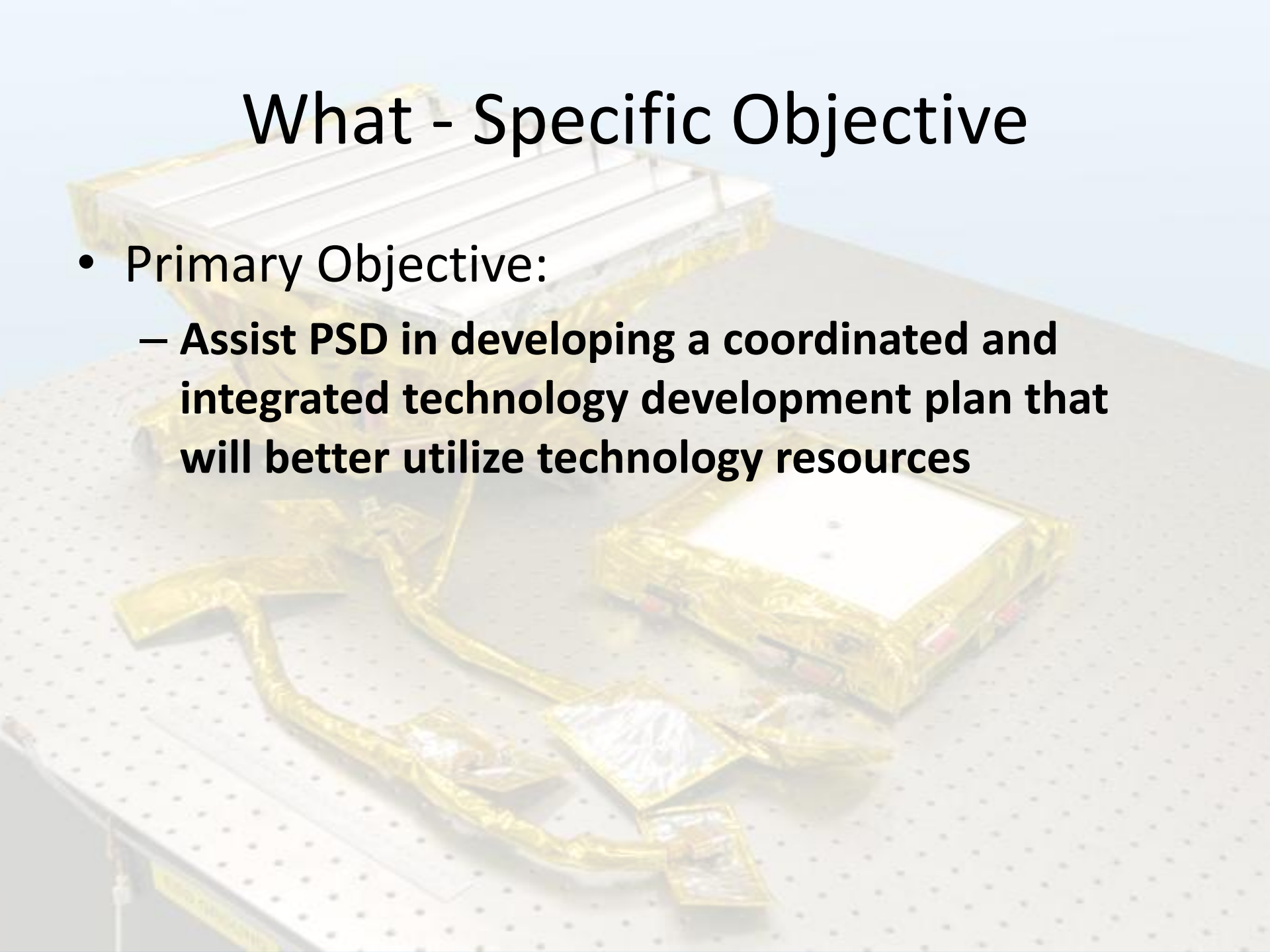
- PSD is creating a panel to take a hard look at it's technology development projects and recommend process and policy changes to improve effectiveness and performance
- The panel provides recommendations on the “how” while the decadal provides the “what”

Why

- Poor evaluation of PSD technology development plans in NRC decadal midterm and advisory groups
- A desire to achieve better coordination among technology development efforts within and external to PSD
- Increased cost pressure
 - Tight PSD resources - particularly in the next couple of years
 - Technology projects in general have experienced significant cuts in prior years
 - Concern that technologies will not be ready when needed by missions

What - Specific Objective

- Primary Objective:
 - **Assist PSD in developing a coordinated and integrated technology development plan that will better utilize technology resources**



Secondary Objectives

- 1) develop an integrated and coordinated plan that addresses the PSD technology development needs including but not limited to instrumentation and sensors, spacecraft systems (such as power, communication, and propulsion), planetary protection, sample curation, field testing, and flight demonstration missions as required. Recommend approaches to improve technology maturation through the higher Technology Readiness Levels (TRL's)
- 2) align the technology development plan to address the decadal technology recommendations
- 3) ensure that the approach addresses the weaknesses identified by NRC decadal midterm review and other sanctioned community reports or reviews
- 4) ensure that the approach has enough flexibility to take advantage of domestic or foreign missions of opportunity (MOO's) or other partnering opportunities as applicable to technology development or maturation
- 5) recommend modifications to current processes so that the plan will be easy to assess and performance will be readily transparent to PSD, potential users, and the science community. Ensure that the plan addresses technology development metrics to consider
- 6) assess the current review/oversight processes used by the various technology programs and provide suggestions to consider if modifications would be beneficial
- 7) develop two notional technology development roadmaps grounded in current decadal recommendations, identifying key opportunities or needs and utilizing realistic costs for the technology developments. The two roadmaps should reflect two different funding levels, a) current PSD technology budgets and b) an optimal budget
- 8) engage the science community in the panels' thinking and planning process and communicate out to them the status and plans

How

- The panel will work with the science community, decadal panels, PSD, as well as current technology projects
- Evaluate a variety of processes, policies, best practices while soliciting community suggestions throughout the evaluation process
- Provide a set of recommendations and options to PSD leadership

Expected Products

- Final report that contains data collected or generated by panel, community meeting notes and suggestions, findings, and recommendations
- Several presentations summarizing work and results to be presented at planetary science community venues
- Two technology development roadmaps for next decade
 - 1) Budget driven and 2) Optimal

Questions and Suggestions

